

CLAIMS

1. A circularly welded joint, featuring excellent fatigue strength properties, obtained by welding the ends of two pieces of steel plates perpendicularly together, wherein between the two pieces of said steel plates, at least the steel plate on the side on which the main stress is exerted is the one that suppresses the propagation of cracks due to fatigue and, when the thickness of said steel plate is denoted by t , the residual stress in the direction of main stress is the compressive residual stress over a range of not smaller than $t/10$ or not smaller than 3 mm in the direction of plate thickness from the circularly welded surface of said steel plate.
2. A circularly welded joint featuring excellent fatigue strength according to claim 1, wherein said steel plate that suppresses the propagation of cracks due to fatigue is one that has the compressive residual stress in the surface layer of said steel plate.
3. A method of producing a circularly welded joint featuring excellent fatigue strength of claim 1 or 2, wherein a range within 5 mm from the end portion of said circularly welded joint is impacted with an ultrasonic oscillation terminal.
4. A welded structure, featuring excellent fatigue strength, using the circularly welded joint of claim 1 or 2.